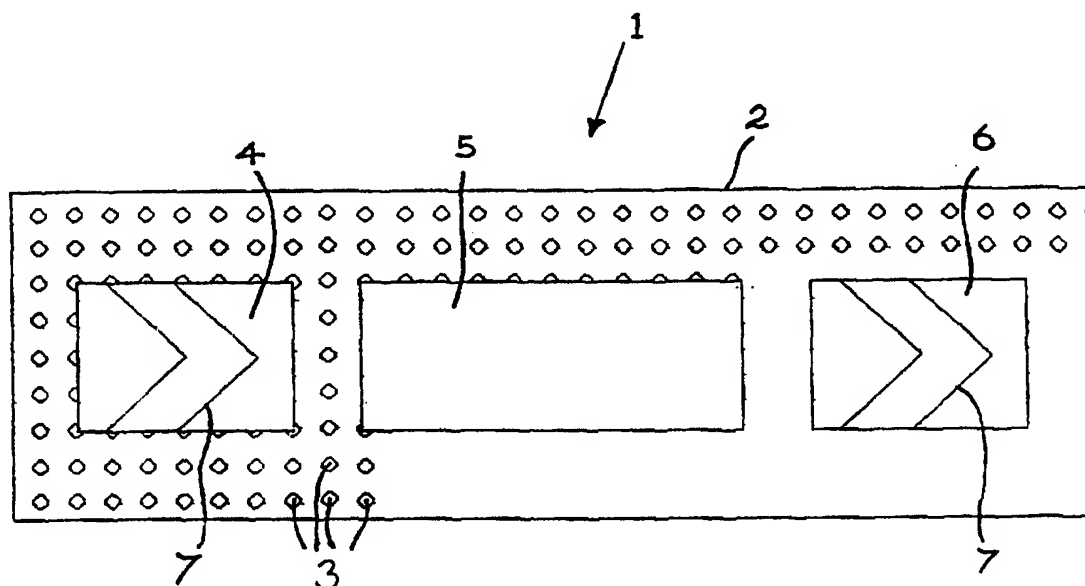




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/GB99/03602 (22) International Filing Date: 29 October 1999 (29.10.99) (30) Priority Data: 9823661.5 30 October 1998 (30.10.98) GB (71)(72) Applicant and Inventor: EVANS, Thomas, John [GB/GB]; Hafan, Llanarth, Ceredigion SA47 0NF (GB). (74) Agent: DAVIES, Gregory, Mark; Urquhart-Dykes & Lord, Alexandra House, Alexandra Road, Swansea SA1 5ED (GB).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>

(54) Title: SIGNAGE ARRANGEMENT**(57) Abstract**

A length of flexible sheet (2) carries a signage indicium (4, 5, 6). The flexible sheet material includes an arrangement of a spaced apertures (3) along its length which has particular advantage in minimising the wind loading effect on the signage. The signage indicium may be preprinted onto the sheet material. In an alternative embodiment, signage indicium panels may be mounted on the flexible sheet.

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Signage Arrangement

5 The present invention relates to a signage arrangement,
and in particular to a signage arrangement for providing
temporary or intermittent signage.

10 Signage is frequently required for temporary or
intermittent use, for example where temporary road works
are being undertaken or where pedestrian or traffic flow
diversion schemes are in operation. Attempts have been
made to reduce problems associated by wind loading effect
on temporary signs by means of providing perforations or
apertures in the relevant sign. Examples of such
arrangements are disclosed in, for example, CA-A-2105461
15 and DE-A-29618040U1.

An improved signage arrangement has now been devised.

20 According to the invention, there is provided a signage
arrangement comprising a length of flexible sheet
material, the length of flexible sheet material:

- i). carrying a signage indicium;
- 25 ii) being capable of being wound in a roll by manual
force; and,
- iii) having an arrangement of a multiplicity of
apertures through the sheet material.

30

The arrangement of the multiplicity of spaced apertures

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reduces the wind loading effect on the signage.

5 The multiplicity of apertures in the flexible sheet are preferably substantially regularly spaced, desirably such that the apertures are spread substantially uniformly over a zone (preferably a large proportion, more preferably the majority) of the length of sheet material.

10 The sheet material may be a reticulated or mesh material, the apertures being defined by reticular elements comprising the length of sheet material. Alternatively, the apertures may be formed through a web or membrane comprising the sheet material. The apertures may therefore be formed concurrently with formation of the
15 length of sheet material, or formed subsequent to formation of the length of material in un-apertured form.

The length of sheet material is preferably of plastics material.

20

The apertured sheet material is flexible sufficiently to enable the length of material to be wound in a roll by manual force. The apertured sheet material may be substantially conformable, limp or flaccid. Alternatively
25 the length of sheet may have a degree of rigidity (particularly in a direction transverse to the longitudinal direction) notwithstanding its ability to be wound in a roll by manual force.

30 The signage indicium may be preprinted onto the sheet material or formed integrally with the sheet material. In

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an alternative embodiment, the signage indicium may comprise signage elements (such as signage indicium panels) mounted on the flexible sheet material which thereby acts as a backing.

5

A signage indicium may be provided on opposed faces of the flexible sheet material.

10

The signage indicium may comprise a directional marking such as a series of chevrons or the like.

The signage indicium may, advantageously be luminous or reflective.

15

The indicium may extend substantially continuously along the flexible sheet material or may, alternatively, comprise an indicium repeated at spaced intervals along the length of flexible sheet.

20

The flexible sheet may carry a further indicium different to the first mentioned indicium. The further indicium may comprise an advertising or other informative indicium, and be preprinted onto the flexible sheet or comprise an indicium element (such as a panel) carried by the flexible

25

One or other of the indicia may be selectively re-configurable. For example an indicium may comprise an LCD panel mounted on the flexible sheet controlled to have a desired output display. The output display could be an

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indicium element is de-mountable from the flexible sheet.

5 The multiplicity of regularly spaced apertures preferably
comprise a grid or array of apertures provided along a
length of the flexible sheet. Desirably the grid or array
includes apertures dimensioned and spaced such that, for
one or more zones of the sheet, the apertures comprise
between 30% and 60% of the respective zone. Desirably
substantially the entire length of the flexible sheet
10 comprises the grid or array of regularly spaced apertures
(parts of which may serve as a backing for an indicium).
The apertures preferably extend across the majority of the
width of the flexible sheet (at least in certain zones).

15 The flexible sheet preferably comprises a plastics
material and may, for example comprise a plastics film or
a more rigid flexible sheet or strip.

Desirably, the arrangement further comprises support means
20 for supporting the flexible sheet, preferably proximate at
least one end thereof. The support means preferably
comprises a post beneficially having a support base. The
support post is preferably de-mountable from a support
base. The post may be of two part construction,
25 preferably arranged to fit together along a longitudinal
joint. The post (and also preferably the base) is
substantially of plastics construction.

In one embodiment the post preferably comprises an outer
30 peripheral wall comprising a plurality of apertures
communicating with the interior of the post. The post may

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be formed of the same sheet material comprising the indicia carrying sheet material, formed into a hollow post.

5 Desirably warning means (preferably a warning light such as an LED) is provided. The warning means is preferably mounted on or in the support post.

10 The arrangement preferably includes storage means arranged to store the sheet material in a substantially un-extended condition, preferably wound on a roll or reel. The storage means preferably comprises a storage housing, which may, advantageously be mounted on support means such as the support post. The storage housing includes an
15 outlet permitting the length of sheet material to be extended (by drawing) from the housing.

The storage means for the roll or reel of flexible sheet material preferably includes biasing means (such as spring
20 means) arranged to act to wind the sheet material to a wound stored condition on the roll or reel.

The arrangement may include power means for powering one or more electrical or electronic devices (Such as LCD
25 display panels or LED lights) comprising the arrangement. The power means may comprise an electrical battery and/or preferably comprises solar power means preferably one or more solar power devices which beneficially may be mounted on or in support means comprising the arrangement. For
30 example a solar power cell may be mounted on a support post provided primarily for supporting a length of the flexible

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sheet material. The battery may be rechargeable, preferably via a solar power device.

Desirably the arrangement includes switching means arranged to control operation of one or more electrical or electronic devices. Desirably the switching means is light dependant, advantageously acting to switch at a predetermined light level.

According to a further aspect, the invention provides a post:

i) comprising an outer peripheral wall having an array of apertures communicating with the interior of the post; and/or

ii) including

a) electrically operable warning means mounted on or in the post; and

b) power means for the electrically operable warning means, the power means comprising a rechargeable battery and/or solar or wind electrical supply means.

Desirably, the power supply means includes light sensitive switching means arranged to trigger or cut-off electrical supply to the warning means.

The invention will now be further described in specific

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embodiments by way of example only and with reference to the accompanying drawings in which:

5 Figure 1 is a representation of an indefinite length of flexible sheet material comprising a signage arrangement according to the invention;

10 Figure 2 is view of an alternative embodiment of an indefinite length of flexible sheet material comprising signage arrangement according to the invention:

15 Figure 3 is an exploded perspective view of a support means which may comprise a signage arrangement according to the invention;

Figure 4 is a plan view of a part of the support means of Figure 3; and

20 Figures 5a, 5b and 5c disclose alternative embodiments of support means.

Referring to the drawings, and initially to Figure 1, a signage arrangement 1 is shown comprising an indeterminate length of flexible plastics sheet material 2. The flexible plastics sheet material 2 is dark in colour and provided with an array of regularly spaced circular apertures 3. The length of apertured sheet material is flexible at least in the longitudinal direction such that it may be wound in a roll or reel for storage or other purposes. The sheet material may be formed for example of apertured reticulated sheet material such as that

25

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commercially available under the trademark NETLON.

Mounted on the face of the sheet material 2 are indicium panels 4, 5, 6. Indicium panels 4, 6 are of flexible plastics material and preprinted on their obverse face with luminous or reflective chevrons 7. Indicium panels 4, 6 may be adhesive backed for mounting to the flexible sheet 2 or, alternatively, may be provided with hooked or velcro fasteners or the like for mounting to the flexible sheet 2. Panel 5 is a flexible LCD panel which may be arranged to display a message or warning.

Referring to the embodiment shown in Figure 2, the arrangement 101 comprises a flexible plastics sheet 102 provided with an array of regularly spaced apertures 103 on which are preprinted a series of luminous or reflective chevrons 107. The chevrons are preprinted prior to the array of apertures being formed in the flexible plastics sheet 102. Alternatively, the chevrons may be incorporated in the sheet contemporaneously with formation of the sheet (for example during the NETLON forming process) or printed subsequently to formation of the apertured sheet. An LCD panel 105 is mounted on the surface of flexible sheet 102 giving the facility to display a warning, or advertising message.

In use, a flexible signage sheet 2,102 is supported by support posts such as those, for example, shown in Figures 3, 5a, 5b, 5c. The relevant signage sheet may be secured to respective support posts in any convenient manner. In one embodiment, a length of sheet 2, 102 may be provided

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on a spring reel internally of a housing covered by such a support post.

Referring to the support post shown in Figure 3, a base 20 is provided with an aperture 21 for locating a rigid plastic support post 22. Rotatable toggle fasteners 23 are provided for securing the length of sheet by passing through apertures 3,103 in the flexible signage sheet 2, 102.

The top of the support post 22 carries a solar power panel 24 for powering a LED light 25. A light sensitive switch 26 is provided to ensure that the LED is only operated in circumstances where the ambient light has fallen below a predetermined level.

Referring to Figures 5a, 5b and 5c there are shown alternative support posts which are each of two-part construction and arranged to fix together by a variety of means. Posts 22a and 22b include complimentary engageable formations 27, 28 which enable the halves comprising the support posts to be assembled along a longitudinally running joint. In the embodiments shown in Figure 5c a securing band is provided approximate opposed ends of respective post halves to provide secure engagement with the other half of the respective halves.

In an alternative arrangement the support posts may comprise apertured plastics sheet material such as NETLON material formed into a hollow tubular construction. This provides an extremely light and durable post for use as

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described.

5 In use, with the flexible signage sheet 2, 102 supported
by a relevant arrangement of posts 22, the signage
arrangement can be readily put in position to provide the
required signage arrangement at any convenient location.
The regular arrangement of apertures 3,103 in the
10 respective flexible sheet 2, 102 reduces significantly the
effective wind loading on the signage arrangement, which
makes the signage arrangement particularly useful for use
out of doors.

The provision of display panel, the configuration of which
may be varied (such as LCD panels), enables the signage
15 arrangement to be particularly useful for
advertising/warning purposes.

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Claims:

1. A signage arrangement comprising a length of flexible sheet material, the length of flexible sheet material:
- 5
- i) carrying a signage indicium;
- ii) being capable of being wound in a roll by manual force; and,
- 10
- iii) having an arrangement of a multiplicity of apertures through the sheet material.
- 15
2. A signage arrangement according to claim 1, wherein the multiplicity of apertures in the flexible sheet are substantially regularly spaced.
- 20
3. A signage arrangement according to claim 1 or claim 2, wherein the apertures are spread substantially uniformly over substantially the entirety of the length of sheet material.
- 25
4. A signage arrangement according to any preceding claim, wherein the signage indicium is printed onto the sheet material or formed integrally with the sheet material.
- 30
5. A signage arrangement according to any preceding claim, wherein the signage indicium includes signage

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elements mounted on the flexible sheet material.

- 5 6. A signage arrangement according to any preceding claim, wherein signage indicia is provided on opposed faces of the flexible sheet material.
- 10 7. A signage arrangement according to any preceding claim, wherein the signage indicium comprises a directional marking.
- 15 8. A signage arrangement according to any preceding claim, wherein the signage indicium is luminous or reflective.
- 20 9. A signage arrangement according to any preceding claim, wherein the indicium extends substantially continuously along the flexible sheet material.
- 25 10. A signage arrangement according to any of claims 1 to 8, wherein the indicium is repeated at spaced intervals along the length of flexible sheet.
- 30 11. A signage arrangement according to any preceding claim, wherein the flexible sheet carries a further indicium different to the first mentioned indicium.
12. A signage arrangement according to claim 11, wherein the further indicium comprises an advertising or other informative indicium.
13. A signage arrangement according to any preceding

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claim, wherein the indicium is selectively re-configurable.

- 5 14. A signage arrangement according to any preceding claim, wherein the indicium comprises an LCD panel mounted on the flexible sheet and controllable to have a desired output display.
- 10 15. A signage arrangement according to any preceding claim, wherein the multiplicity of regularly spaced apertures are configured as a grid, array, or reticular form arrangement of apertures provided along a length of the flexible sheet.
- 15 16. A signage arrangement according to claim 15, wherein the grid or array includes apertures dimensioned and spaced such that, for one or more zones of the sheet, the apertures comprise more than 50% of the respective zone (preferably more than 90% of the zone.
- 20 17. A signage arrangement according to any preceding claim, wherein the longitudinal dimension of the length of sheet is many times greater than the width of the sheet .
- 25 18. A signage arrangement according to any preceding claim, wherein apertured portions of the flexible sheet serve as a backing for an indicium.
- 30 19. A signage arrangement according to any preceding

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claim, wherein the majority of the width of the flexible sheet, at least in certain zones, includes apertures.

- 5 20. A signage arrangement according to any preceding claim, wherein the flexible sheet comprises a plastics material.
- 10 21. A signage arrangement according to claim 20, wherein the flexible sheet comprises a plastics film or a more rigid flexible sheet or strip.
- 15 22. A signage arrangement according to any preceding claim, wherein the flexible sheet material is wound as a roll or reel.
- 20 23. A signage arrangement according to any preceding claim, further comprising support means for supporting the flexible sheet.
- 25 24. A signage arrangement according to claim 23, wherein the support means supports the flexible sheet proximate at least one end thereof.
- 30 25. A signage arrangement according to claim 23 or 24, wherein the support means includes a post.
26. A signage arrangement according to claim 25, wherein the support post is provided with a support base.
27. A signage arrangement according to claim 26, wherein

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the support post is de-mountable from the support base.

5 28. A signage arrangement according to any of claims 25 to 27, wherein the post is of two part construction, arranged to fit together along a longitudinal joint.

10 29. A signage arrangement according to any of claims 24 to 28, wherein the support means is primarily of plastics construction.

15 30. A signage arrangement according to any preceding claim further including warning means (such as an audible or visual warning means).

31. A signage arrangement according to any of claims 24 to 30, wherein warning means is mounted on or in the support means.

20 32. A signage arrangement according to any preceding claim, including storage means arranged to store the sheet material in a substantially un-extended condition.

25 33. A signage arrangement according to claim 32, wherein the sheet material is wound on a roll or reel.

30 34. A signage arrangement according to claim 32 or 33, wherein the storage means comprises a storage housing.

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35. A signage arrangement according to any of claims 32 to 34, wherein the storage means mounted on support means such as a support post.
- 5 36. A signage arrangement according to claim 34, wherein the storage housing includes an outlet permitting the length of sheet material to be extended from the housing.
- 10 37. A signage arrangement according to any of claims 32 to 36, wherein the flexible sheet material is wound on a roll or reel, the storage means for the roll or reel of flexible sheet material preferably includes
- 15 biasing means (such as spring means) arranged to act to wind the sheet material to a wound stored condition on the roll or reel.
- 20 38. A signage arrangement according to any preceding claim, further including power means for powering one or more electrical or electronic devices comprising the arrangement.
- 25 39. A signage arrangement according to claim 38, wherein the power means comprises an electrical battery and/or solar/wind power means.
- 30 40. A signage arrangement according to claim 38 or claim 39, wherein switching means is arranged to control operation of one or more electrical or electronic devices.

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41. A signage arrangement according to claim 40, wherein the switching means is light dependant, acting to switch at a predetermined light level.

5

42. A signage arrangement according to any of claims 38 to 41, wherein the electrical or electronic devices comprise light emitting devices.

FIGURE 1

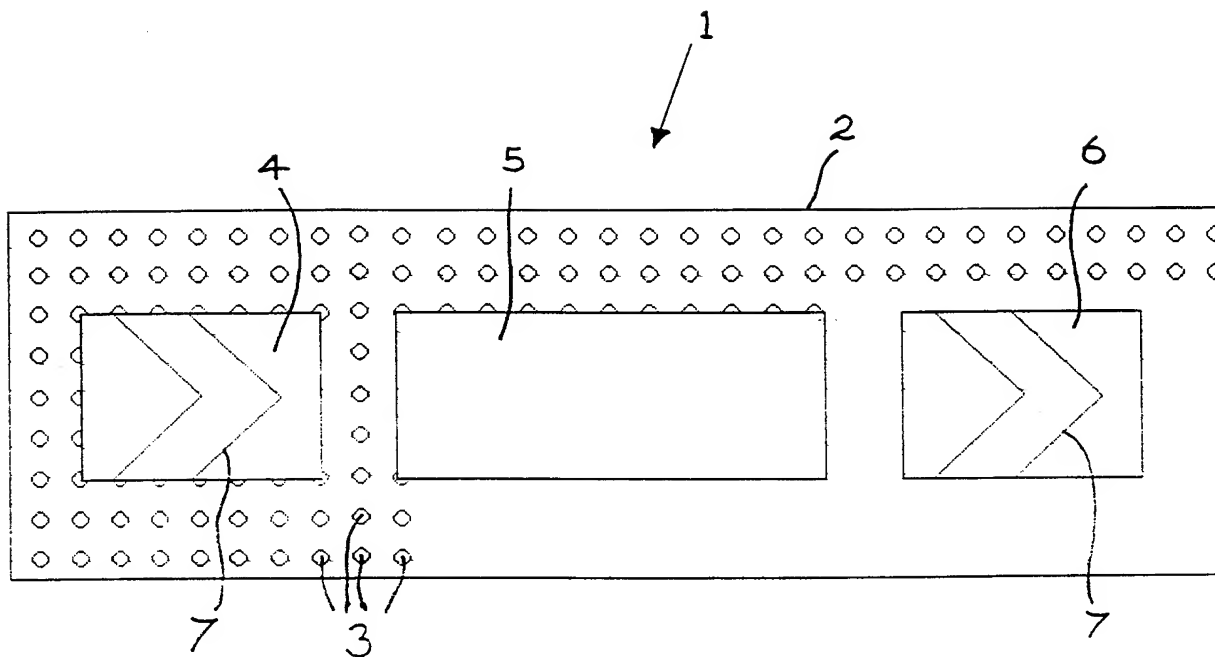


FIGURE 2

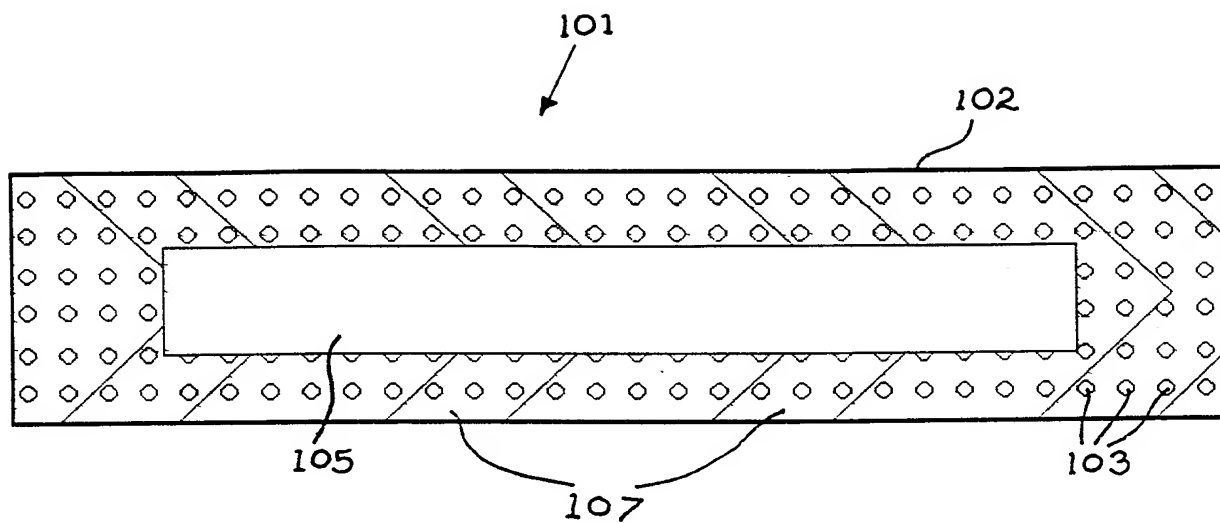


FIGURE 3

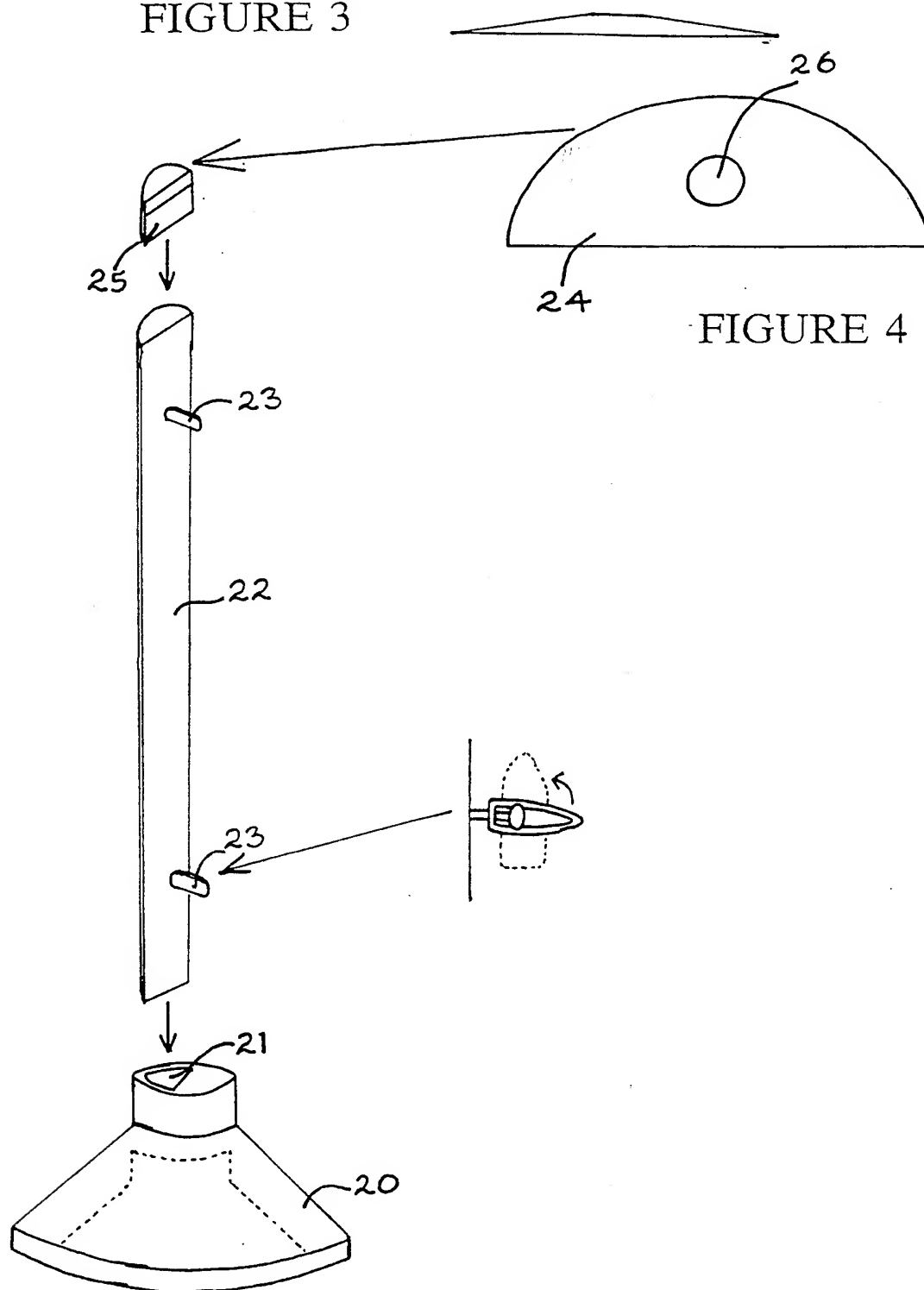


FIGURE 4

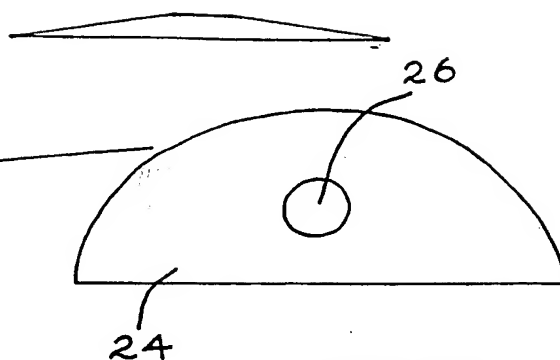


FIGURE 5c

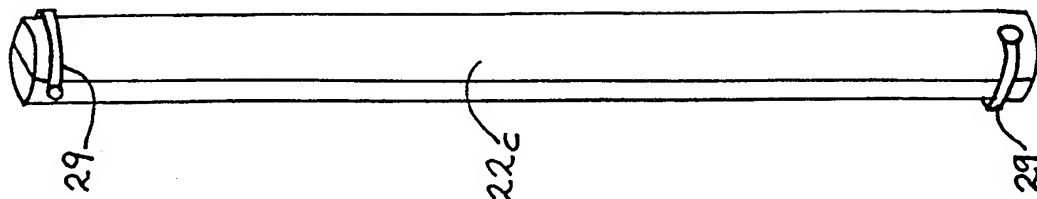


FIGURE 5b

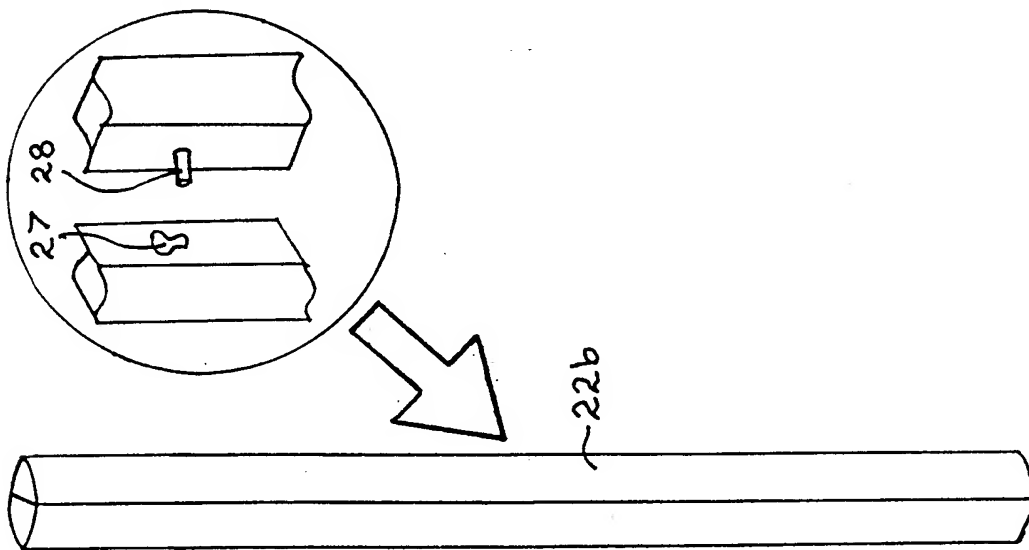
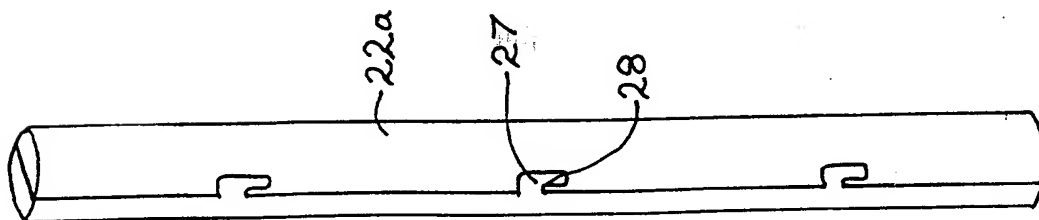


FIGURE 5a



INTERNATIONAL SEARCH REPORT

In: International Application No

PCT/GB 99/03602

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 G09F7/00 G09F7/18 G09F15/00				
According to International Patent Classification (IPC) or to both national classification and IPC				
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 G09F D06N E01F				
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched				
Electronic data base consulted during the international search (name of data base and, where practical, search terms used)				
C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
X	WO 98 31870 A (VERTEX TECHNOLOGY AG ; SMITH JACOBUS FREDERICK (ZA); ROGERS THOMAS) 23 July 1998 (1998-07-23) * page 3, line 7 - line 16* * page 8, line 11 - line 13* * page 9, line 10 - line 19* * page 10, line 11 - line 17* * figures, 2,5,8*	1-10, 15-17, 19-22		
Y	—	14, 23-27		
Y	GB 2 255 998 A (DEE ORGAN LTD) 25 November 1992 (1992-11-25) * page 1, line 1 - line 14* * page 3, line 20 - line 31* * page 8, line 8 - line 9* * figure 1 *	23-27		
— — — — — -/-				
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C.				
<input checked="" type="checkbox"/> Patent family members are listed in annex.				
* Special categories of cited documents :				
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Date of the actual completion of the international search <div style="text-align: center; font-weight: bold;">21 January 2000</div>	Date of mailing of the international search report <div style="text-align: center; font-weight: bold;">28/01/2000</div>			
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer <div style="text-align: center; font-weight: bold;">Pantoja Conde, A</div>			

INTERNATIONAL SEARCH REPORT

Int ional Application No

PCT/GB 99/03602

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	PATENT ABSTRACTS OF JAPAN vol. 012, no. 058 (P-669), 20 February 1988 (1988-02-20) -& JP 62 203123 A (ASAHI CHEM IND CO LTD), 7 September 1987 (1987-09-07) abstract	14
A	EP 0 412 281 A (I C I B IND COMMERCIALE IMMOBI) 13 February 1991 (1991-02-13) * column 2, line 24 - line 53* * column 3, line 10 - line 18* *figures 1-3*	1,20-27, 32-36
A	US 5 484 225 A (WARNER RANDY L) 16 January 1996 (1996-01-16) * column 5, line 61 - line 66* *column 6, line 1 - line 31* * figure 1*	1,23,24, 30,31, 38,39,42

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 99/03602

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